

Unit 3 - Week 1

Course outline
How does an NPTEL online course work?
Week 0
Week 1
<ul style="list-style-type: none"> ● Lecture 1 : Integers ● Lecture 2 : Divisibility and primes ● Lecture 3 : Infinitude of primes ○ Lecture 4 : Division algorithm and the GCD ● Lecture 5 : Computing the GCD and Euclid's lemma
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Assignment 1

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2020-09-30, 23:59 IST.

This is Assignment 1.

- 1) For $a, b, c \in \mathbb{N}$, which of the following statements is false? 1 point
- If $a|b$ and $b|c$ then $a|c$.
 If $a|b$ and $b \leq c$ then $a|c$.
 If $a|b$ then $a \leq b$.
 If $a \leq b$ and $b \leq c$ then $a \leq c$.
- No, the answer is incorrect.
Score: 0
Accepted Answers:
If $a|b$ and $b \leq c$ then $a|c$.
- 2) Which of the following statements is true for $a, b, c, d \in \mathbb{N}$? 1 point
- If $a \leq b$ and $c \leq d$ then $a \leq c$.
 If $a|b$ and $c|d$ then $ac|bd$.
 If $a|b$ and $c|d$ then $(a+c)$ divides $(b+d)$.
 If $a = 2$ and $b \leq d \leq 2b$ then $d|2b$.
- No, the answer is incorrect.
Score: 0
Accepted Answers:
If $a|b$ and $c|d$ then $ac|bd$.
- 3) Which of the following sets contains no prime number? 1 point
- $\{2, 4, 6, 8, 10\}$
 $\{3, 6, 9, 12, 15\}$
 $\{4, 8, 12, 16, 20\}$
 $\{5, 10, 15, 20, 25\}$
- No, the answer is incorrect.
Score: 0
Accepted Answers:
{4, 8, 12, 16, 20}
- 4) The number of primes upto 50 is 1 point
- 13
 14
 15
 16
- No, the answer is incorrect.
Score: 0
Accepted Answers:
15
- 5) The 10-th and 11-th primes, respectively, are 1 point
- 29, 31
 31, 33
 23, 29
 29, 37
- No, the answer is incorrect.
Score: 0
Accepted Answers:
29, 31
- 6) The first prime number p such that $2p + 1$ is not a prime is 1 point
- 13
 4
 5
 7
- No, the answer is incorrect.
Score: 0
Accepted Answers:
7
- 7) The division algorithm applied to $a = 301$ and $b = 17$ gives 1 point
- $q = 18, r = 15$
 $q = 17, r = 12$
 $q = 16, r = 19$
 $q = 19, r = 8$
- No, the answer is incorrect.
Score: 0
Accepted Answers:
 $q = 17, r = 12$
- 8) The division algorithm applied to $a = 2020$, $b = 31$ gives 1 point
- $q = 61, r = 19$
 $q = 64, r = 16$
 $q = 67, r = 13$
 $q = 65, r = 5$
- No, the answer is incorrect.
Score: 0
Accepted Answers:
 $q = 65, r = 5$
- 9) The GCD of 8778 and 2210 is 1 point
- 2
 26
 22
 14
- No, the answer is incorrect.
Score: 0
Accepted Answers:
2
- 10) If we apply the division algorithm to compute the GCD of 1492 and 1066 then we get the GCD after n steps where n is 1 point
- 5
 6
 7
 8
- No, the answer is incorrect.
Score: 0
Accepted Answers:
5